REVIEW SET 10A

1 If $p = 5$, $q = -3$, and $r = 6$, evaluate:

a $\dfrac{r}{q}$ **b** $\dfrac{p-q}{p+q}$ **c** $\dfrac{\sqrt{p^2-16}}{r-q}$ **d** $\dfrac{p+2q-2r}{r^2-p^2}$

2 Simplify:

a $\dfrac{(2t)^2}{6t}$ **b** $\dfrac{16a+8b}{6a+3b}$ **c** $\dfrac{x(x-4)}{3(x-4)}$ **d** $\dfrac{8}{4x+8}$

3 Simplify:

a $\dfrac{2x+6}{x^2-9}$ **b** $\dfrac{x^2+4x+4}{x^2+2x}$ **c** $\dfrac{3x^2-6x}{3x^2-5x-2}$

4 Simplify:

a $\dfrac{2a-2b}{b-a}$ **b** $\dfrac{5x-15}{3x-x^2}$ **c** $\dfrac{16-x^2}{2x-8}$

5 Simplify:

a $\dfrac{a}{b} \times \dfrac{b}{3}$ **b** $\dfrac{a}{b} \div \dfrac{b}{3}$ **c** $\dfrac{a}{b} + \dfrac{b}{3}$ **d** $\dfrac{a}{b} - \dfrac{b}{3}$

6 Simplify:

a $\dfrac{7x-14}{x} \times \dfrac{3}{x-2}$ **b** $\dfrac{t^2-3t}{6t+6} \times \dfrac{t+1}{4t-12}$

7 Simplify:

a $\dfrac{9}{n} \div 6$ **b** $\dfrac{7}{3x-6} \div \dfrac{x+5}{x^2-2x}$

8 Write as a single fraction:

a $\dfrac{2x}{3} + \dfrac{x}{4}$ **b** $2 + \dfrac{x}{7}$ **c** $\dfrac{x}{4} - 1$ **d** $\dfrac{x}{2} + \dfrac{x}{4} - \dfrac{x}{3}$

9 Simplify:

a $\dfrac{x}{3} + \dfrac{x-1}{4}$ **b** $\dfrac{x+2}{3} - \dfrac{2-x}{6}$ **c** $\dfrac{2x+1}{5} - \dfrac{x-1}{10}$

10 Simplify:

a $\dfrac{1}{x+1} + \dfrac{2}{x-2}$ **b** $\dfrac{5}{x-1} - \dfrac{4}{x+1}$ **c** $\dfrac{1}{x^2} + \dfrac{1}{x+1}$

11 Solve for x: $\dfrac{6}{x} = \dfrac{5}{11-x}$

12 **a** Write as a single fraction: **i** $a - \frac{9}{a}$ **ii** $1 - \frac{a}{3}$

b Hence simplify $\left(a - \frac{9}{a}\right) \div \left(1 - \frac{a}{3}\right)$.

c Evaluate $\left(a - \frac{9}{a}\right) \div \left(1 - \frac{a}{3}\right)$ for:

i $a = 1$ **ii** $a = 3$ **iii** $a = 5$

1 **a** -2 **b** 4 **c** $\frac{1}{3}$ **d** $-\frac{13}{11}$

2 **a** $\frac{2t}{3}$ **b** $\frac{8}{3}$ **c** $\frac{x}{3}$ **d** $\frac{2}{x+2}$

3 **a** $\frac{2}{x-3}$ **b** $\frac{x+2}{x}$ **c** $\frac{3x}{3x+1}$

4 **a** -2 **b** $-\frac{5}{x}$ **c** $-\frac{x+4}{2}$

5 **a** $\frac{a}{3}$ **b** $\frac{3a}{b^2}$ **c** $\frac{3a+b^2}{3b}$ **d** $\frac{3a-b^2}{3b}$

6 **a** $\frac{21}{x}$ **b** $\frac{t}{24}$ **7** **a** $\frac{3}{2n}$ **b** $\frac{7x}{3(x+5)}$

8 **a** $\frac{11x}{12}$ **b** $\frac{14+x}{7}$ **c** $\frac{x-4}{4}$ **d** $\frac{5x}{12}$

9 **a** $\frac{7x-3}{12}$ **b** $\frac{3x+2}{6}$ **c** $\frac{3x+3}{10}$

10 **a** $\frac{3x}{(x+1)(x-2)}$ **b** $\frac{x+9}{(x-1)(x+1)}$ **c** $\frac{x^2+x+1}{x^2(x+1)}$

11 $x = 6$

12 **a** **i** $\frac{a^2-9}{a}$ **ii** $\frac{3-a}{3}$ **b** $-\frac{3(a+3)}{a}$

c **i** -12 **ii** undefined **iii** $-\frac{24}{5}$